
GLOSSARY OF TECHNICAL TERMS

Accretion: The gradual accumulation of new material on top of older sediments or soils.

Accuracy: The closeness of a measured value to the true value (see also: precision).

Acre-foot (ac-ft): The volume of liquid required to cover one acre to a depth of one foot.

Adaptive management: The application of scientific information and explicit feedback mechanisms to refine and improve future management decisions.

Advanced Treatment Technologies (ATT): Biological and chemical treatments designed to reduce phosphorus levels in storm water to very low concentrations.

Agricultural privilege tax: An annual tax levied on farming activities in the Everglades Agricultural Area and the C-139 basins to support Everglades restoration.

Alkalinity: The alkaline nature of a substance (water) derived by measuring its ability to accept hydrogen ions.

Analyte: A substance measured in an analytical procedure.

Anthropogenic: Resulting from human influence.

Aquifer: An underground, water-bearing layer of porous rock, sand, or gravel.

Baseline period: A specified period of time during which collected data are used for comparisons with subsequent data.

Benthic: Pertaining to the bottom or sediment habitats of a body of water.

Best Management Practices (BMPs): Land, agricultural, industrial, and waste management techniques that reduce pollutant export from a specified area.

Bioaccumulation: An increase in concentration of a contaminant in an organism, relative to its concentration in the environment over time (see also: biomagnification).

Bioaccumulation factor (BAF): The ratio of a contaminant concentration in living tissue to its concentration in the organism's diet.

Biogeochemistry: The study of the form, fate, and movement of elements and compounds through an ecosystem. Nitrogen cycling is an example of a biogeochemical process.

Biomagnification: In a food chain, the process by which contaminants increase progressively in organisms at higher trophic levels (see also: bioaccumulation).

Biomass: The amount of living material in a particular sample, population, or area, usually measured as dry mass.

Brackish: Containing a mixture of salt water and fresh water.

Bulk density: The mass of soil in a given volume.

Compliance monitoring: In a water quality management program, compliance is associated with meeting permit conditions based on ambient standards. Ongoing monitoring provides periodic water quality data, which are used to assess compliance.

Comprehensive Everglades Restoration Plan (CERP): The framework and guide for the restoration, protection, and preservation of the South Florida ecosystem. CERP also provides for water-related needs of the region, such as water supply and flood protection.

Conductance: The ability of an aqueous solution to carry an electric current. Conductance is used as a measure of total dissolved solids in water.

Decomposition: The action of microorganisms breaking down organic compounds into simpler ones, resulting in the release of energy.

Diel: A variation that occurs regularly every day.

Discharge (or flow): The rate of water movement past a reference point, measured as volume per unit time (usually expressed as cubic feet or cubic meters per second).

Drawdown: A lowering of the water level in a reservoir or other body of water.

Drought: A long period of abnormally low rainfall, especially one that adversely affects growing or living conditions.

Ecosystem: Biological communities together with their environment, functioning as a unit.

Ecotoxicology: A scientific discipline combining the methods of ecology and toxicology in studying the effects of toxic substances, especially pollutants, on the environment.

Emergent macrophytes: Wetland plants that extend above the water surface. Cattail and rushes are two examples.

Estuary: The part of the wide lower course of a river where its current is met by ocean tides or an arm of the sea at the lower end of a river where fresh and salt water meet.

Eutrophic: An aquatic environment enriched with nutrients, usually associated with high plant productivity and low oxygen levels.

Evapotranspiration (ET): The process by which water is released to the atmosphere by evaporation from a water surface or movement from a plant surface (more specifically known as transpiration).

Everglades Agricultural Area (EAA): An area extending south from Lake Okeechobee to the northern levee of WCA-3A, from its eastern boundary at the L-8 canal to the western boundary along the L-1, L-2, and L-3 levees. The EAA incorporates almost 3,000 square kilometers (1,158 square miles) of highly productive agricultural land.

Everglades Construction Project (ECP): Twelve interrelated construction projects located between Lake Okeechobee and the Everglades. The cornerstone of the ECP is six large constructed wetlands known as Stormwater Treatment Areas (STAs). They use naturally occurring biological processes to reduce phosphorus that enters the Everglades. The ECP also contains four hydropattern restoration projects that will improve the volume, timing, and distribution of water entering the Everglades.

Everglades Forever Act (EFA): A 1994 Florida law (Section 373.4592, Florida Statutes), amended in 2003, to promote Everglades restoration and protection. This will be achieved through comprehensive and innovative solutions to issues of water quality, water quantity, hydroperiod, and invasion of exotic species to the Everglades ecosystem. The EFA establishes the plan, the enforceable schedule, and the funding for the various components of the Everglades Program.

Everglades Nutrient Removal (ENR) Project: A constructed wetland, initiated in 1994, designed to biologically remove phosphorus from agricultural runoff water before entering the Arthur R. Marshall Loxahatchee National Wildlife Refuge. This demonstration project was also designed to optimize operation of constructed wetlands for phosphorus removal, which has proven highly effective.

Everglades Program: Projects, regulations, monitoring efforts, and research associated with restoring and protecting the Everglades. This program was established by the 1994 Everglades Forever Act.

Everglades Protection Area (EPA): As defined in the Everglades Forever Act, the EPA is comprised of Water Conservation Areas 1, 2A, 2B, 3A, and 3B, the Arthur R. Marshall Loxahatchee National Wildlife Refuge, and the Everglades National Park.

Everglades Stormwater Program (ESP): A program to ensure that water quality standards are met at all structures not included in the Everglades Construction Project.

Everglades Trust Fund: A fund created by Florida law (Chapter 97-258, Florida Statutes) to support ecosystem restoration of the Everglades.

Excursion (in water quality): A constituent concentration that is of potential concern as an exceedance and possible violation of a water quality criterion. "Excursion" indicates some uncertainty in the interpretation of the reported constituent concentration, requiring further evaluation of background conditions, ancillary data, quality assurance, and historical data. These factors must be assessed by the Florida Department of Environmental Protection (FDEP) before the concentration is considered an exceedance or violation.

Fauna: All animal life associated with a given habitat.

Floating aquatic vegetation (FAV): Wetland plants that have portions floating at or near the water surface but are rooted in substrate (for example, water lily).

Flora: All plant life associated with a given habitat.

Flow-weighted mean (FWM) concentration: The average concentration of a substance in water, corrected for the volume of water flow at the time of sampling. Samples taken when flow is high are given greater weight in the average. Flow-weighted mean concentrations can be used to calculate mass loading at a particular location.

Free-floating aquatic vegetation (FFAV): Wetland plants that have some or all of their parts at or near the water surface but are not rooted in substrate (for example, water lettuce).

Geometric mean: A statistical average of a set of transformed numbers, often used to represent a central tendency in highly variable data, such as water quality. It is calculated from data transformed using powers or logarithms and then transformed back to original scale after averaging.

Hydraulic residence (or retention) time (HRT): The length of time that water resides in a specified area.

Hydrogeomorphology: The scientific study of the physical appearance and operational character of a water body as it adjusts its boundaries to the magnitude of flow and erosional debris produced within the watershed.

Hydrology: The scientific study of the properties, distribution, and effects of water on the earth's surface, in the soil and underlying rocks, and in the atmosphere.

Hydropattern: Water depth, duration, timing, and distribution of fresh water in a specified area. A consistent hydropattern is critical for maintaining various ecological communities in wetlands.

Hydroperiod: Duration and frequency of inundation in a wetland area.

Impoundment: A reservoir used for retaining water.

Inflow: The act or process of flowing in or into.

Intrusion: The invasion of a body of fresh water by a body of salt water, due to its greater density. It can occur either in surface water or groundwater bodies. The term is applied to the flooding of freshwater marshes by sea water, the upward migration of sea water into rivers and navigation channels, and the movement of sea water into freshwater aquifers along coastal regions.

Invasive exotic species: Species of plants or animals that are not naturally found in a region (nonindigenous). They can sometimes aggressively invade habitats and cause multiple ecological changes, including the displacement of native species.

Ion: An atom or a group of atoms that has acquired a net electric charge by gaining or losing one or more electrons.

Limnology: The scientific study of bodies of fresh water for their biological, physical and geological properties.

Litterfall: Movement of leaves, twigs, and other forms of organic matter from the biosphere to the litter layer found in soil.

Littoral: The region of well-lit water close to shore. Home to most of the aquatic plantlife (both rooted and floating) in a pond or lake because the high amount of sunlight reaching it allows for significant photosynthetic activity.

Loading (or mass loading): The amount of material carried by water into a specified area, expressed as mass per unit of time. One example is phosphorus loading into Water Conservation Area 2A, measured in metric tons per year.

Long-Term Plan: The Conceptual plan for achieving and maintaining water quality goals for all discharges to the Everglades Protection Area. The Long-Term Plan contains activities to achieve that goal and to permit the State of Florida and the South Florida Water Management District to fulfill their obligations under the Everglades Forever Act.

Macrophytes: Visible (non-microscopic) plants found in aquatic environments. Examples in South Florida wetlands include sawgrass, cattail, sedges, and lilies.

Marsh: An area of soft, wet, low-lying land, characterized by grassy vegetation and often forming a transition zone between water and land.

Median: The middle value in a set of ordered data. The median is often used to express the typical (average) value of a group of water quality data, because the median is less influenced than the arithmetic average by outlying values routinely seen in such data.

Methylmercury (MeHg): A highly toxic form of the heavy metal mercury that is readily accumulated by living organisms. Inorganic mercury is converted to methylmercury by sulfate-reducing bacteria in aquatic sediments, such as those that are present in Everglades marshes.

Minimum Flows and Levels (MFLs): Florida law (Chapter 373, Florida Statutes) requires the state's water management districts to set water levels for each major body of water "...at which further withdrawals would be significantly harmful to the water resources or ecology of the area."

Moving average: The arithmetic average of a sequence of data within a data set, moved and calculated sequentially to smooth the data and reveal trends (e.g., 12-month moving average TP concentration).

Muck: Dark, organic soil derived from well-decomposed plant biomass.

Non-ECP: All water control structures associated with the Everglades Protection Area outside the Everglades Construction Project (ECP).

Nutrients: Organic or inorganic compounds essential for the survival of an organism. In aquatic environments, nitrogen and phosphorus are important nutrients that affect the growth rate of plants.

Oligotrophic: An aquatic environment depleted of nutrients, resulting in low plant productivity.

Outflow: The act or process of flowing out of.

Parameter: A variable or constant representing a characteristic of interest. For example, conductance is a water quality parameter. Use of this term is highly subjective and varies greatly across disciplines.

Parts per billion (ppb): A unit of measure, equivalent to micrograms per liter (1ppb = 1 µg/L).

Periphyton: The biological community of microscopic plants and animals attached to surfaces in aquatic environments. Algae are the primary component in these assemblages, which naturally reduce phosphorus levels in water and serve a key function in Stormwater Treatment Areas.

pH: A measure of the concentration of hydrogen ions in a solution.

Phosphorus (P): An element that is essential for life. In freshwater aquatic environments, phosphorus is often in short supply; increased levels can promote the growth of algae and other plants.

Photosynthesis: The process in green plants and certain other organisms by which carbohydrates are synthesized from carbon dioxide and water using light as an energy source.

Pollutant loading: Influx of a chemical or nutrient that contaminates air, soil, or water.

Precision: The degree of reproducibility of a measurement. Low precision yields high scatter in data (see also: accuracy).

Quality assurance (QA): A program to provide a means for a product to meet a defined set of quality standards at a specific level of confidence.

Quality control (QC): Steps taken to ensure that quality standards are met.

Regulatory Action Strategy (RAS): A suite of projects and programs being developed to address water quality concerns for structures outside the Everglades Construction Project permit.

Riverine: Located on or inhabiting the banks of a river.

Salinity: Of or relating to chemical salts (usually measured in parts per thousand, or ppt).

Scientifically defensible: Information that is supportable using accepted scientific methods of data collection, analysis, and reporting.

Slough: A depression associated with swamps and marshlands as part of a bayou, inlet or backwater; it contains areas of slightly deeper water and a slow current and can be thought of as the broad, shallow rivers of the Everglades.

Species richness: The number of species occurring in a particular area for a specified sampling period.

Stage: The height of a water surface above an established reference point (datum or elevation).

Stormwater Treatment Area (STA): A large, constructed wetland designed to remove pollutants, particularly nutrients, from stormwater runoff using natural processes.

Structure: Man-made pump stations, reservoirs, channel improvements canals, levees, and diversion channels.

Submerged aquatic vegetation (SAV): Wetland plants that exist completely below the water surface.

Total maximum daily load (TMDL): The maximum allowed level of pollutant loading for a water body, while still protecting its uses and maintaining compliance with water quality standards, as defined in the Clean Water Act.

Tributary: A stream that flows into a larger stream or other body of water.

Trophic levels: Distinct levels at which groups of organisms are using or producing energy. Plants, the primary producers of energy, are in the lowest trophic level. Predators, such as bass, wading birds, and raccoons, are in the highest trophic level. Some metals, such as mercury, accumulate at higher trophic levels.

Turbidity: The measure of suspended material in a liquid (typically measured in nephelometric turbidity units or NTUs).

Water Conservation Areas (WCAs): Diked areas of the remnant Everglades that are hydrologically controlled for flood control and water supply purposes. The primary targets of the Everglades restoration, and major components of the Everglades Protection Area.

Water quality (WQ) criteria: Constituent concentrations based on scientific data and judgments on the relationship between pollutant concentrations and environmental and human health effects.

Water quality standards (WQS): State-mandated water quality levels that are comprised of a beneficial use classification, water quality criteria applicable to that classification, Florida antidegradation policy, and several provisions in other rules.

Water Preserve Areas (WPA): Multipurpose water-holding areas located along the western border of Southeast Florida's urbanized corridor.

Watershed: A region or area bounded peripherally by a water parting and draining ultimately to a particular watercourse or body of water.

Water Year 2004: The period from May 1, 2003 through April 30, 2004 during which water quality and other data were collected and reported on in the *2005 South Florida Environmental Report*.

Wetland: An area that is inundated or saturated by surface water or groundwater with vegetation adapted for life under those soil conditions (for example, swamps, bogs, and marshes).